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Author/Editor:

J4:323518 Development of solid lubricants for high  
temperature rolling ceramic bearing. II. Ternary system solid  
A lubricants composed of  $\text{CaF}_2$  +  $\text{BaF}_2$ , and  
V  $\text{Cr}_2\text{O}_3$ . Toyota, Hiroshi; Yoshioka, Takeo; Umeda, Kazunori; Niizeki,  
Shin; Kaneko, Toshiaki; Itakura, Takashi (Res. Dev. Div., Koyo Seiko  
P Co., Ltd., Kashiwara, 582, Japan). Toraiborojisuto, 41(2), 146-53  
(Japanese) 1996. CODEN: TORAE0. ISSN: 0915-1168.  
Year of publication:

Publisher:

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56248-61-0, 1,1,3,3-Tetrachlorodisiloxane 64735-34-8, Tungsten  
fluoride oxide (WF3O) 106563-15-9 146956-38-9, Titanium bromide  
176788-92-4, Calcium silver chloride (CaAg2Cl4)  
(for prepn. of oxides using disiloxanes)  
1303-58-8P, Gold oxide (Au2O3) 1304-56-9P, Beryllium oxide  
1305-78-8P, Calcium oxide, preparation 1306-19-0P, Cadmium oxide,  
preparation 1307-96-6P, Cobalt oxide (CoO), preparation  
1308-38-9P, Chromium oxide, preparation  
1309-48-4P, Magnesium oxide, preparation 1312-81-8P, Lanthanum  
sesquioxide 1313-27-5P, Molybdenum trioxide, preparation  
1313-59-3P, Sodium oxide, preparation 1313-99-1P, Nickel monoxide,  
preparation 1314-13-2P, Zinc oxide, preparation 1314-23-4P,  
Zirconium dioxide, preparation 1314-35-8P, Tungsten trioxide,  
preparation 1314-36-9P, Yttrium sesquioxide, preparation  
1314-61-0P, Tantalum pentoxide 1314-62-1P, Vanadium pentoxide,  
preparation 1317-38-0P, Cupric oxide, preparation 1344-28-1P,  
Alumina, preparation 11113-84-1P, Ruthenium oxide 12035-82-4P,  
Platinum monoxide 12055-23-1P, Hafnium dioxide 12057-24-8P,  
Lithium oxide, preparation 12060-08-1P, Scandium sesquioxide  
12136-45-7P, Potassium oxide, preparation 12164-77-1P, Neodymium  
pentoxide 12624-27-0P, Rhenium oxide 12645-46-4P, Iridium oxide  
12680-36-3P, Rhodium oxide 13463-67-7P, Titania, preparation  
20667-12-3P, Silver oxide 21908-53-2P, Mercury oxide  
50926-11-9P, Indium tin oxide 61970-39-6P, Osmium oxide  
(prepn. using disiloxanes)

L98 ANSWER 4 OF 38 HCA COPYRIGHT 1997 ACS

124:323518 Development of solid lubricants for high  
temperature rolling ceramic bearing. II. Ternary system solid  
lubricants composed of  $\text{CaF}_2 + \text{BaF}_2$ , and

$\text{Cr}_2\text{O}_3$ . Toyota, Hiroshi; Yoshioka, Takeo; Umeda, Kazunori; Niizeki,  
Shin; Kaneko, Toshiaki; Itakura, Takashi (Res. Dev. Div., Koyo Seiko  
Co., Ltd., Kashiwara, 582, Japan). Toraiborojisuto, 41(2), 146-53  
(Japanese) 1996. CODEN: TORAE0. ISSN: 0915-1168.

AB The solid lubricants and binder of Ni-based alloy of  
Ni-23.2 Co-17.0 Cr-12.5 Al-0.5 Y were formed through plasma  
injection under low pressure upon Ni-Cr alloy (Inconel 713). Ratio  
of  $\text{CaF}_2 + \text{BaF}_2 : \text{Cr}_2\text{O}_3$  were between 40/60 and 60/40,  
and ratio of the solid lubricants: binder were between  
10:90 and 40:60. Contact part of the retainer were examd. with SEM  
and EPMA after the test of 1000 rpm (2.2 m/s) at 800 .degree.C under  
load of 4.9 N between retainer and roller and 200 N between roller  
and ring. The friction characteristics of the solid  
lubricants between RT and 900 .degree.C were examd. with the  
high temp. reciprocating friction and abrasion tester, and the  
layers of lubricants were examd. using high temp. X-ray  
diffraction. The formation of  $\text{BaCrO}_4$  were obsd. above 700  
.degree.C.

CC 57-2 (Ceramics)

ST Section cross-reference(s): 56

inorg solid lubricant rolling ceramic bearing; barium

Request for Translation submitted 10/7/97

**Calcium fluoride chromia solid lubricant****Bearings**

(roller, ceramic; development of **CaF<sub>2</sub>-BaF<sub>2</sub>-Cr<sub>2</sub>O<sub>3</sub>** solid lubricants for high temp. rolling ceramic bearings)

**IT Lubricants**

(solid, development of **CaF<sub>2</sub>-BaF<sub>2</sub>-Cr<sub>2</sub>O<sub>3</sub>** solid lubricants for high temp. rolling ceramic bearings)

**IT 118889-98-8**

(binder, solid lubricant; development of **CaF<sub>2</sub>-BaF<sub>2</sub>-Cr<sub>2</sub>O<sub>3</sub>** solid lubricants for high temp. rolling ceramic bearings)

**IT 10294-40-3, Barium chromate (BaCrO<sub>4</sub>)**

(formation of, from solid lubricant in friction; development of **CaF<sub>2</sub>-BaF<sub>2</sub>-Cr<sub>2</sub>O<sub>3</sub>** solid lubricants for high temp. rolling ceramic bearings)

**IT 1308-38-9, Chromium oxide (Cr<sub>2</sub>O<sub>3</sub>), uses****7787-32-8, Barium fluoride (BaF<sub>2</sub>)****) 7789-75-5, Calcium fluoride (****CaF<sub>2</sub>), uses**

(solid lubricants; development of **CaF<sub>2</sub>-BaF<sub>2</sub>-Cr<sub>2</sub>O<sub>3</sub>** solid lubricants for high temp. rolling ceramic bearings)

**L98 ANSWER 5 OF 38 HCA COPYRIGHT 1997 ACS**

124:131039 **Composite** film of glass fabric, fluorine-containing resin, its manufacture, and light interference film. Komatsu, Yasuo; Okumura, Haruichiro; Negishi, Takao (Toray Industries, Japan). Jpn. Kokai Tokkyo Koho JP 07299885 A2 951114 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 94-94961 940509.

**AB** The title **composite** film, suitable for use in a house structure, wall and roof, is composed of a glass fabric and a F-contg. resin, and has a light interference film formed on .gtoreq.1 side. The F- contg. resin comprises .gtoreq.1 copolymer selected from tetrafluoroethylene-hexafluoropropylene, tetrafluoroethylene-ethylene, and tetrafluoroethylene-perfluoroalkyl vinyl ether copolymers. The interference film may be a transparent metal film, prepd. by vapor deposition, composed of .gtoreq.1 compd. selected from SiO, SiO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, In<sub>2</sub>O<sub>3</sub>/SnO<sub>2</sub>, **MgF<sub>2</sub>**, Al<sub>2</sub>O<sub>3</sub>, and Cr<sub>2</sub>O<sub>3</sub>. The light interference film may be a laminate of the transparent metal film and a reflective metal film with av. reflectance .gtoreq.60% in visible, composed of a metal selected from Al, Cu, Ag, Mg, Ti, Ni, Co, Au, Cr, Fe (sic), and Rh. The light interference film may be a laminate of the reflective metal film, the transparent metal film, and a translucent film with av. reflectance in visible radiation area <60% composed of .gtoreq.1 metal selected from Al, Cu, Ag, Mg, Ti, Ni, Co, In, Cr, Si, Au, and Au/Pt.

**IC ICM B32B017-10**

**ICS B32B007-02; B32B027-30; C23C014-06; C23C014-08; C23C014-14**

**CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related**